

CLAIMS

1. (Original) A method for converting a data stream in a first format into a data stream in a second format,

wherein each said data stream includes data packs in which video data and audio data are stored and a control pack
5 for use in a playback control of the data stream,

wherein in the data stream in the first format, address information, which represents addresses of the data packs and which is not required while the data stream is played back, is
10 present and associated with the data stream, and

wherein in the data stream in the second format, address information, which represents addresses of the data packs and which is required while the data stream is played back, is stored in the control pack,

15 the method comprising the steps of:

acquiring the data stream in the first format and the associated address information thereof;

generating a second control pack in the second format from a first control pack in the first format, the second
20 control pack storing the address information acquired; and

replacing the first control pack with the second control pack, thereby generating the data stream in the second format

from the data stream in the first format.

2. (Original) The format conversion method of claim 1,
wherein the data stream in the first format is an arrangement
5 of multiple data units, each of the data units including a
plurality of data packs and the first control pack, and

wherein the method further comprises the steps of:

locating an extension field, which is included only in a
first one of the data packs, in each of second and following
10 data units; and

replacing data of the located extension field with
predetermined stuffing data.

3. (Original) The format conversion method of claim 2,
further comprising the steps of:

15 detecting a data length of a stuffing field, which is
arranged after the extension field and in which the stuffing
data is stored in advance; and

determining whether or not the data length detected is a
reference length or less,

20 wherein the step of replacing is carried out if the data
length is the reference length or less.

4. (Original) The format conversion method of claim 1,
wherein the data stream in the first format is an arrangement
of multiple data units, each of the data units including a
5 plurality of data packs and the first control pack, each said
data pack including at least one packet in which either the
video data or the audio data is stored, and

wherein the method further comprises the steps of:

locating an extension field; which is included only in a
10 first one of the data packs, in each of second and following
data units;

detecting a data length of a stuffing field, which is
arranged after the extension field and in which stuffing data
is stored in advance;

15 determining whether or not the data length detected is a
reference length or less;

deleting the extension field and the stuffing field if
the data length is greater than the reference length; and

adding a padding packet, of which a packet length
20 corresponds to the combined field length of the extension and
stuffing fields deleted, to the at least one packet.

5. (Original) The format conversion method of claim 1, wherein the data stream in the first format is an arrangement of multiple data units, each of the data units including a plurality of data packs and the first control pack, each said
5 data pack including a packet in which either the video data or the audio data is stored and a padding packet for adjusting a pack length of the data pack,

wherein the method further comprises the steps of:

locating an extension field, which is included only in a
10 first one of the data packs, in each of second and following data units;

deleting the extension field; and

adjusting a packet length of the padding packet according to a field length of the extension field deleted.

15

6. (Original) The format conversion method of claim 1, wherein the address information is stored in the first control pack of the data stream in the first format, and

wherein the step of acquiring the address information
20 includes extracting the address information stored in the first control pack.

7. (Original) The format conversion method of claim 6,
wherein the step of acquiring the address information includes
extracting the address information stored in an attribute
information field, on which an arbitrary type of information
5 is describable, within the first control pack.

8. (Original) The format conversion method of claim 1,
wherein the step of acquiring the address information includes
extracting the address information stored in a data file
10 separately from the data stream.

9. (Original) The format conversion method of claim 1,
wherein the address information shows a storage location of a
data pack in which a picture representing the video is stored
15 and a storage location of another data pack in which audio to
be reproduced synchronously with the picture is stored.

10. (Currently Amended) The format conversion method of
claim 2, wherein the first one of the data packs corresponds
20 to each of a first one of video packs including video data and
that of audio packs including audio data.

11. (Original) An apparatus for converting a data stream in a first format into a data stream in a second format,

wherein each said data stream includes data packs in which video data and audio data are stored and a control pack for use in a playback control of the data stream, and

wherein in the data stream in the first format, address information, which represents the addresses of the data packs and which is not required while the data stream is played back, is present and associated with the data stream, and

wherein in the data stream in the second format, address information, which represents the addresses of the data packs and which is required while the data stream is played back, is stored in the control pack,

the apparatus comprising:

a receiving section for acquiring the data stream in the first format and the associated address information thereof; and

a pack generating section for generating a second control pack in the second format from a first control pack in the first format, the second control pack storing the address information acquired, the pack generating section replacing

the first control pack with the second control pack, thereby generating the data stream in the second format from the data stream in the first format.

5 12. (Original) The format conversion apparatus of claim 11, wherein the data stream in the first format is an arrangement of multiple data units, each of the data units including a plurality of data packs and the first control pack, and

10 wherein the apparatus further comprises:

 a decision section for locating an extension field, which is included only in a first one of the data packs, in each of the second and following data units; and

 a converting section for replacing data of the located
15 extension field with predetermined stuffing data.

 13. (Original) The format conversion apparatus of claim 12, wherein the decision section detects a data length of a stuffing field, which is arranged after the extension
20 field and in which the stuffing data is stored in advance, and determines whether or not the data length detected is a reference length or less, and wherein if the data length is

the reference length or less, the decision section instructs the converting section to make the replacement.

14. (Original) The format conversion apparatus of
5 claim 11, wherein the data stream in the first format is an arrangement of multiple data units, each of the data units including a plurality of data packs and the first control pack, each said data pack including at least one packet in which either the video data or the audio data is stored, and
10 wherein the apparatus further comprises:

a decision section for locating an extension field, which is included only in a first one of the data packs, in each of the second and following data units, detecting the data length of a stuffing field, which is arranged after the extension
15 field and in which stuffing data is stored in advance, and determining whether or not the data length detected is a reference length or less;

a packet generating section for generating a padding packet; and

20 a converting section for deleting the extension field and the stuffing field if the data length is greater than the reference length, adjusting a packet length of the padding

packet according to the combined field length of the extension and stuffing fields deleted, and then adding the padding packet to the at least one packet.

5 15. (Original) The format conversion apparatus of claim 11, wherein the data stream in the first format is an arrangement of multiple data units, each of the data units including a plurality of data packs and the first control pack, each said data pack including a packet in which either
10 the video data or the audio data is stored and a padding packet for adjusting a pack length of the data pack,

wherein the apparatus further comprises:

a decision section for locating an extension field, which is included only in a first one of the data packs, in each of
15 the second and following data units; and

a converting section for deleting the extension field and adjusting a packet length of the padding packet according to a field length of the extension field deleted.

20 16. (Original) The format conversion apparatus of claim 11, wherein the address information is stored in the first control pack of the data stream in the first format, and

wherein the pack generating section extracts the address information stored in the first control pack.

17. (Original) The format conversion apparatus of
5 claim 16, wherein the pack generating section extracts the address information stored in an attribute information field, on which an arbitrary type of information is describable, within the first control pack.

10 18. (Original) The format conversion apparatus of claim 11, wherein the pack generating section extracts the address information stored in a data file separately from the data stream.

15 19. (Original) The format conversion apparatus of claim 11, wherein the address information shows a storage location of a data pack in which a picture representing the video is stored and a storage location of another data pack in which audio to be reproduced synchronously with the picture is
20 stored.

20. (Currently Amended) The format conversion apparatus of claim 12, wherein the first one of the data packs corresponds to each of a first one of video packs including video data and that of audio packs including audio data.

5

21. (New) A recording method to be used to record a data stream in a first format, comprising the steps of:

receiving data of a content representing video and audio;

generating a data pack, in which data of the video is
10 stored, and a data pack, in which data of the audio is stored,
based on the data received;

acquiring address information that represents the
addresses of the data packs arranged;

generating a control pack in accordance with control
15 information, which is required for controlling playback of the
data packs;

arranging the data packs and the control pack in the
first format, thereby generating the data stream;

acquiring address information that shows a storage
20 locations of the data packs in the data stream; and

recording the address information and the data stream on
a storage medium in association with each other.

22.(New) The recording method of claim 21, further comprising the step of storing the address information in the control pack.

5

23.(New) The recording method of claim 22, further comprising the step of storing the address information in an attribute information field, on which an arbitrary type of information is describable, within the first control pack.

10

24.(New) The recording method of claim 21, further comprising the step of storing the address information in a data file separately from the data stream.

15

25.(New) The recording method of claim 21, wherein the address information shows a storage location of a data pack in which a picture representing the video is stored and a storage location of another data pack in which audio to be reproduced synchronously with the picture is stored.

20

26.(New) A recorder for recording a data stream in a first format on a storage medium, comprising:

an encoder, which receives data of a content representing video and audio, generates a data pack, in which data of the video is stored, and a data pack, in which data of the audio is stored, based on the data received and outputs address information that represents the addresses of the data packs arranged;

a generating section for generating a control pack in accordance with control information, which is required for controlling playback of the data packs;

10 a system encoder for arranging the data packs and the control pack in the first format, thereby generating the data stream; and

a writing section for writing at least the data stream on a storage medium.

15

27.(New) A recorder of claim 26, wherein the generating section acquire and describe the address information in the control pack.

20

28.(New) A recorder of claim 26, wherein the writing section also store the address information in a data file separately from the data stream.

29.(New) A computer program product of a data stream
conversion program, the program being executable by a computer
to be used to convert a data stream in a first format into a
5 data stream in a second format,

wherein each said data stream includes data packs in
which video data and audio data are stored and a control pack
for use in a playback control of the data stream,

wherein in the data stream in the first format, address
10 information, which represents addresses of the data packs and
which is not required while the data stream is played back, is
present and associated with the data stream, and

wherein in the data stream in the second format, address
information, which represents addresses of the data packs and
15 which is required while the data stream is played back, is
stored in the control pack,

the program which when executed by the computer causes
the computer to perform a processing, the processing
comprising the steps of:

20 acquiring the data stream in the first format and the
associated address information thereof;

generating a second control pack in the second format

from a first control pack in the first format, the second control pack storing the address information acquired; and

replacing the first control pack with the second control pack, thereby generating the data stream in the second format
5 from the data stream in the first format.

30.(New) A computer program product of a recording program, the program being executable by a computer to be used to generate and record a data stream in a first format,

10 the program which when executed by the computer causes the computer to perform a processing, the processing comprising the steps of:

receiving data of a content representing video and audio;

generating a data pack, in which data of the video is
15 stored, and a data pack, in which data of the audio is stored, based on the data received;

acquiring address information that represents the addresses of the data packs arranged;

generating a control pack in accordance with control
20 information, which is required for controlling playback of the data packs; arranging the data packs and the control pack in the first format, thereby generating the data stream;

acquiring address information that shows a storage locations of the data packs in the data stream; and

recording the address information and the data stream on a storage medium in association with each other.